

Attorney Docket No.: ISPH-0524
Inventors: Bennett et al.
Serial No.: 09/734,847
Filing Date: December 12, 2000
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The following listing of claims will replace all prior versions and listings of claims in this application.

Listing of Claims:

Claim 1 (currently amended): A method of controlling the behavior of a cell through modulation of the processing of a selected wild-type mRNA target within said cell, said method comprising binding to said wild-type mRNA target an antisense compound having at least one 2'guanidinium, 2'carbamate, 2'aminooxy, 3'methylene phosphonate, peptide nucleic acid having a lysine residue at its C-terminus, or peptide nucleic acid having an arginine residue at its C-terminus which is specifically hybridizable with said wild-type mRNA target and which does not elicit cleavage of the wild-type mRNA target upon binding, so that processing of said wild-type mRNA target is modulated and said behavior is controlled.

Claim 2 (original): The method of claim 1 wherein said modulation of the processing of a selected wild-type mRNA target is modulation of splicing of said mRNA target.

Claim 3 (canceled).

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Claim 4 (previously presented): The method of claim 1 wherein said antisense compound comprises a 2'-guanidinium, 2'-carbamate, 3'methylene phosphonate or 2'-aminooxy modification on substantially every sugar.

Claim 5 (original): The method of claim 4 wherein said antisense compound comprises at least one phosphorothioate backbone linkage.

Claim 6 (original): The method of claim 1 wherein said antisense compound is an antisense oligonucleotide.

Claim 7 (original): The method of claim 2 wherein said modulation of splicing is a redirection of splicing.

Claim 8 (original): The method of claim 2 wherein said modulation of splicing results in an altered ratio of splice products.

Claim 9 (original): The method of claim 2 wherein said modulation of splicing results in exclusion of one or more exons from the mature mRNA.

Claim 10 (original): The method of claim 9 wherein said antisense compound is targeted to at least a portion of an exon to be excluded.

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Claim 11 (original): The method of claim 10 wherein said antisense compound is targeted to an intron-exon junction.

Claim 12 (original): The method of claim 7 wherein said antisense compound is targeted to at least a portion of a region up to 50 nucleobases upstream from a 5' splice site.

Claim 13 (original): The method of claim 12 wherein said redirection of splicing is a decreased frequency of use of said 5' splice site.

Claim 14 (currently amended): A method of controlling the behavior of a non-viral cell through modulation of polyadenylation of a selected wild-type mRNA target within said cell, said method comprising binding to said wild-type mRNA target an antisense compound having at least one 2'guanidinium, 2'carbamate, 2'aminooxy, 3'methylene phosphonate, peptide nucleic acid having a lysine residue at its C-terminus, or peptide nucleic acid having an arginine residue at its C-terminus and which is specifically hybridizable with said wild-type mRNA target so that polyadenylation of said wild-type mRNA target is modulated and said behavior is controlled.

Claim 15 (currently amended): A method of controlling the behavior of a non-viral cell through modulation of processing of

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a selected wild-type mRNA target within said cell, said method comprising binding to said wild-type mRNA target an antisense compound having at least one 2'guanidinium, 2'carbamate, 2'aminooxy, 3'methylene phosphonate, peptide nucleic acid having a lysine residue at its C-terminus, or peptide nucleic acid having an arginine residue at its C-terminus and which is specifically hybridizable with a polyadenylation signal or polyadenylation site so that processing of said wild-type mRNA target is modulated and said behavior is controlled.

Claim 16 (original): The method of claim 1 wherein said processing of a selected wild-type cellular mRNA target is regulating stability of said mRNA target, by targeting said antisense compound to a sequence which controls stability of said mRNA target.

Claims 17-30 (canceled).

Claim 31 (original): The method of claim 8, wherein said altered ratio of splice products results from an increase or a decrease in the amount of a splice product encoding a membrane form of a protein relative to a soluble form of a protein.

Claim 32 (original): The method of claim 31 wherein said protein is a receptor.

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Claim 33 (currently amended): The method of claim 32,
wherein said receptor is a hormone ~~of~~ or cytokine receptor.